SAFETY DATA SHEET

1. Identification

Product identifier **WROUGHT ALUMINUM PRODUCTS, 1xxx SERIES ALLOYS**

Other means of identification

SDS number 663

Version # 08

Revision date November 24, 2015.

Other means of identification

Synonyms 1xxx series alloys, * 1xxx Cladding, Alcoa Spectrochemical Standards. 1120, 1350, 1350BS, 1350EC, 1435, 980LR, 990LR, 995LR, AL5, * C01A, C01B, C01C, C01H, C02A, C02J, C03A, C09Z, C14C, C17N, C18B, C18E, C19B, C19P, C22H, C22U, C23U, C27B, C29C, * C30E, C30J, C31C, C33S, C33U, C34U, C35A, C37B, C43K, C46C, C47C, C47S, C49A, C50E, C50R, C52R, C53A, C58D, * C65A, C70A, C71A, C80B, C82J, C88A, C89N, C91Z, C96Z, C99A, C99D, C99J, C178, C196, C479, C481, C500, C502, C515F, C531, C533F, C577F, C578, C586F, * C794, C795, C796, C797, C798, C799, C416F, C426F, CW65, CZ60, Clad 1100, KB10, MD56, MD115, MD119, MD230, MD251, MD335, MR174, RA91, RA179, W005, W006

Recommended use Various fabricated aluminum parts and products

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Alcoa Inc.
201 Isabella Street
Pittsburgh, PA 15212-5858 USA
Health and Safety Tel: 1-412-553-4649
Health and Safety Fax: 1-412-553-4822
Health and Safety Email: accmsds@alcoa.com

Emergency Information CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken); ALCOA: +1-412-553-4001 (24 Hour Emergency Telephone, only English spoken)

Website For a current Safety Data Sheet, refer to Alcoa websites: www.alcoa.com or internally at my.alcoa.com EHS Community

2. Hazard(s) identification

Classification

Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.

Potential health effects

The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual. Additional health information can be found in Section 11.

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

Authority defined hazards Combustible dust

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement May form combustible dust concentrations in air. The mixture does not meet the criteria for classification. May form combustible dust concentrations in air.

Precautionary statement

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal	Reuse or recycle material whenever possible.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Contact with residual oil/oil coating: Can cause irritation. Prolonged or repeated skin contact may cause irritation.
Specific hazards	Non-combustible as supplied. Small chips, fine turnings, and dust from processing may be readily ignitable. Explosion/fire hazards may be present when: • Dust or fines are dispersed in air. • Chips, dust or fines are in contact with water. • Dust and fines are in contact with certain metal oxides (e.g., rust, copper oxide). • Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide). Dust and fume from processing: Can cause irritation of the eyes, skin and upper respiratory tract.

3. Composition/information on ingredients

Composition comments Complete composition is provided below and may include some components classified as non-hazardous.

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminum		7429-90-5	>= 98.9

Additional Information

- Present as impurity. While nickel is not intentionally added to this mixture, it could potentially enter through the recycle stream.
Nickel (7440-02-0): May be present in trace amounts (<0.06%) in alloy(s): C01A, C17N, C18B, C19P, C29C, C31C, C426F, C50E, C52R, C515F, C53A, C586F, C88A, C91Z, C98Z, C799, ECE6, 1060, 1120, 1145, 1200A, 1235, 1350
- Present as impurity. While lead is not intentionally added to this mixture, it could potentially enter through the recycle stream.
Lead (7439-92-1): May be present in trace amounts (<0.03%) in alloy(s): C37B, C426F, C88A, C991, 1050, 1100
Additional compounds which may be formed during processing are listed in Section 8.

4. First-aid measures

Eye contact	Dust and fumes from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.
Skin contact	Dust and fume from processing or contact with lubricant/residual oil: Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Inhalation	Dust and fumes from processing: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.
Ingestion	Not relevant, due to the form of the product.
Most important symptoms/effects, acute and delayed	Contact with residual oil/oil coating: Prolonged skin contact may cause skin irritation and/or dermatitis.
Medical conditions aggravated by exposure	Dust and fume from processing: Asthma, chronic lung disease, and skin rashes.

5. Fire-fighting measures

Suitable extinguishing media	Use Class D extinguishing agents on fines, dust or molten metal. Use coarse water spray on chips and turnings.
Unsuitable extinguishing media	DO NOT USE halogenated extinguishing agents on small chips/fines. DO NOT USE water in fighting fires around molten metal. These fire extinguishing agents will react with the burning material.

Specific hazards arising from the chemical	May be a potential hazard under the following conditions: • Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. • Chips, fines and dust in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces. • Dust and fines in contact with certain metal oxides (e.g., rust, copper oxide). A thermite reaction, with considerable heat generation, can be initiated by a weak ignition source. • Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide). Moisture entrapped by molten metal can be explosive. Contact of molten aluminum with certain metal oxides can initiate a thermite reaction. Finely divided metals (e.g., powders or wire) may have enough surface oxide to produce thermite reactions/explosions.
Special protective equipment and precautions for firefighters	Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.
Fire fighting equipment/instructions	Use gentle surface application of Class D extinguishing agent or dry inert granular material (e.g., sand) to cover and ring the burning material. Apply extinguishing media carefully to avoid creating airborne dust. If impossible to extinguish, protect surroundings and allow fire to burn itself out.
General fire hazards	This product does not present fire or explosion hazards as shipped. Small chips, fine turnings, and dust from processing may be readily ignitable.
Explosion data	
Sensitivity to mechanical impact	Not sensitive.
Sensitivity to static discharge	Take precautionary measures against static discharges when there is a risk of dust explosion.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid generating dust. Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different. Hot aluminum does not necessarily glow red. Use personal protection recommended in Section 8 of the SDS.
Personal precautions, protective equipment and emergency procedures	
For emergency responders	Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different. Hot aluminum does not necessarily glow red. Use personal protection recommended in Section 8 of the SDS.
Evacuation procedures	Molten metal: Keep unnecessary personnel away.
Methods and materials for containment and cleaning up	Collect scrap for recycling. If molten: Use dry sand to contain the flow of material. All tooling (e.g., shovels or hand tools) and containers which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Allow the spill to cool before remelting as scrap.
Environmental precautions	No special environmental precautions required.

7. Handling and storage

Handling	Keep material dry. Avoid generating dust. Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different. Hot aluminum does not necessarily glow red.
Storage	Keep material dry.
Requirements for Processes Which Generate Dusts or Fines	If processing of this product generates dust or if extremely fine particulate is generated, obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin F-1 and National Fire Protection Association (NFPA) standards listed in Section 16. Use non-sparking handling equipment, tools and natural bristle brush. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations (See Section 15). Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used, unless specifically approved for use with flammable/explosive dusts. Dust collection systems must be dedicated to aluminum dust only and should be clearly labeled as such. Do not co-mingle fines of aluminum with fines of iron, iron oxide (rust) or other metal oxides. Do not allow small chunks, fines or dust to contact water, particularly in enclosed areas. Avoid all ignition sources. Good housekeeping practices must be maintained. Do not use compressed air to remove settled material from floors, beams or equipment.

Requirements for Remelting of Scrap Material or Ingot

Molten metal and water can be an explosive combination. The risk is greatest when there is sufficient molten metal to entrap or seal off the water. Water and other forms of contamination on or contained in scrap or remelt ingot are known to have caused explosions in melting operations. While the products may have minimal surface roughness and internal voids, there remains the possibility of moisture contamination or entrapment. If confined, even a few drops of water can lead to violent explosions.

All tooling, containers, molds and ladles which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Any surfaces that may contact molten metal (e.g., concrete) should be specially coated.

Drops of molten metal in water (e.g. from plasma arc cutting), while not normally an explosion hazard, can generate enough flammable hydrogen gas to present an explosion hazard. Vigorous circulation of the water and removal of the particles minimize the hazards.

During melting operations, the following minimum guidelines should be observed:
• Inspect all materials prior to furnace charging and completely remove surface contamination such as water, ice, snow, deposits of grease and oil or other surface contamination resulting from weather exposure, shipment, or storage.
• Store materials in dry, heated areas with any cracks or cavities pointed downwards.
• Preheat and dry large items adequately before charging into a furnace containing molten metal. This is typically done by use of a drying oven or homogenizing furnace. The drying cycle should bring the metal temperature of the coldest item of the batch to 400°F (200°C) and then hold at that temperature for 6 hours.

Thermite explosions have been reported when aluminum alloys were melted in furnaces used for alloying with lead, bismuth or other metals with low melting temperatures. These metals, when added as high purity ingots, can seep through cracks in furnace liners and become oxidized. During subsequent melts in the furnace, molten aluminum can contact these metal oxides resulting in a thermite explosion.

8. Exposure controls/personal protection

Exposure guidelines

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m3	Respirable fraction
		15 mg/m3	Total dust

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.

Alcoa

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust

General

Personnel who handle and work with molten metal should utilize primary protective clothing like polycarbonate face shields, fire resistant tapper's jackets, neck shades (snoods), leggings, spats and similar equipment to prevent burn injuries. In addition to primary protection, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal. Synthetic materials should never be worn even as secondary clothing (undergarments).

Minimize breathing oil vapors and mist. Remove oil contaminated clothing; launder or dry-clean before reuse. Remove oil contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work period. Oil coating is readily removed from skin with waterless hand cleaners followed by a thorough washing with soap and water.

Appropriate engineering controls

Dust and fumes from processing: Use with adequate explosion-proof ventilation to meet the limits listed in Section 8.

Individual protection measures, such as personal protective equipment

Eye/face protection

Dust and fume from processing: Wear safety glasses with side shields.

Skin protection	
Hand protection	Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils and to avoid any skin injury.
Other	The need for personal protective equipment should be based upon a hazard assessment and recommendations from health / safety professionals.
Respiratory protection	Dust and fumes from processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Suggested respiratory protection: P95.
Thermal hazards	Hot aluminum does not necessarily glow red. Contact with molten material can cause thermal burns. Wear appropriate thermal protective clothing, when necessary. When material is heated, wear gloves to protect against thermal burns. Molten metal: Flame retardant protective clothing is recommended. Full Face Shield.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.
Control parameters	Follow standard monitoring procedures.
Environmental exposure controls	No special environmental precautions required.

9. Physical and chemical properties

Form	Solid.
Color	Silver to gray.
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Density	2.70 - 2.71 g/cm3
Melting point/freezing point	1189.4 - 1214.6 °F (643 - 657 °C)
Initial boiling point and boiling range	Not determined
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - upper (%)	Not applicable
Flammability limit - lower (%)	Not applicable
Explosive properties	Dust clouds may be explosive under certain conditions.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not determined
Solubility(ies)	Insoluble
Specific gravity	Not determined
Partition coefficient (n-octanol/water)	Not applicable. Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable

10. Stability and reactivity

Reactivity

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Water: Slowly generates flammable and explosive hydrogen gas and heat. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). Water/aluminum mixtures may be hazardous when confined.
• Heat: Oxidizes at a rate dependent upon temperature and particle size.
• Strong oxidizers: Violent reaction with considerable heat generation. Can react explosively with nitrates (e.g., ammonium nitrate and fertilizers containing nitrate) when heated or molten.
• Acids and alkalis: Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles (e.g., fines and dusts).
• Halogenated compounds: Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided or molten aluminum.
• Iron oxide (rust) and other metal oxides (e.g., copper and lead oxides): A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources for initiation.
• Iron powder and water: Explosive reaction forming hydrogen gas when heated above 1470°F (800°C).

Chemical stability

Stable under normal conditions of use, storage, and transportation.

Possibility of hazardous reactions

Hazardous polymerization does not occur.

Conditions to avoid

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Water: Slowly generates flammable and explosive hydrogen gas and heat. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). Water/aluminum mixtures may be hazardous when confined.
• Heat: Oxidizes at a rate dependent upon temperature and particle size.

Explosions can occur with coils of foil that have been submerged or partially submerged in water for an extended period of time. Water can penetrate between the layers of foil, react with the aluminum surface and generate heat and hydrogen gas. When the coils are removed from the cooling effects of the water, rapid temperature increases can occur causing steam explosions which result in the rupture of the coils and discharge of debris.

Coils of foil may be a potential hazard under the following conditions:
• Coil has been annealed (annealing removes residual oil that could prevent penetration of water
) • Foil is very thin gauge (5-9 µm thickness which increases surface area)
• Coil has been immersed for an extended period of time (several hours or more)
• Wetted coil has recently been removed from the cooling effects of the water

In such situations, the coils should be isolated (30 meters from any personnel) for at least 72 hours as soon as possible after removal from the water. Coils making crackling sounds or emitting steam should not be approached or transported in commerce. Wetted coils should not be charged into a furnace for remelting until completely dry.

Incompatible materials

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Strong oxidizers: Violent reaction with considerable heat generation. Can react explosively with nitrates (e.g., ammonium nitrate and fertilizers containing nitrate) when heated or molten.
• Acids and alkalis: Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles (e.g., fines and dusts).
• Halogenated compounds: Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided or molten aluminum.
• Iron oxide (rust) and other metal oxides (e.g., copper and lead oxides): A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources for initiation. Molten aluminum can react violently with iron oxide without external ignition source.
• Iron powder and water: Explosive reaction forming hydrogen gas when heated above 1470°F (800°C).

Hazardous decomposition products

No hazardous decomposition products are known.

11. Toxicological information

Health effects associated with ingredients

Aluminum dust/fines and fumes: Low health risk by inhalation. Generally considered to be biologically inert (milling, cutting, grinding).

Some products are supplied with an oil coating or have residual oil from the manufacturing process.
Oil: Can cause irritation of skin. Skin contact (prolonged or repeated): Can cause dermatitis.

Health effects associated with compounds formed during processing

The following could be expected if welded, remelted or otherwise processed at elevated temperatures:

Alumina (aluminum oxide): Low health risk by inhalation. Generally considered to be biologically inert.

If the product is heated well above ambient temperatures or machined, oil vapor or mist may be generated.
Oil vapor or mist: Can cause irritation of respiratory tract. Acute overexposures: Can cause bronchitis, headache, central nervous system effects (nausea, dizziness and loss of coordination) and drowsiness (narcosis).

Welding, plasma arc cutting, and arc spray metalizing can generate ozone.
Ozone: Can cause irritation of eyes, nose and upper respiratory tract. Acute overexposures: Can cause shortness of breath, tightness of chest, headache, cough, nausea and narrowing of airways. Effects are reversible on cessation of exposure. Acute overexposures (high concentrations): Can cause respiratory distress, respiratory tract damage, bleeding and the accumulation of fluid in the lungs (pulmonary edema). Effects can be delayed up to 1-2 hours. Additional information: Studies (inhalation) with experimental animals have found genetic damage, reproductive harm, blood cell damage, lung damage and death.

Welding fumes: IARC/NTP: Listed as possibly carcinogenic to humans by IARC (Group 2B). Additional information: In one study, occupational asthma was associated with exposures to fumes from aluminum welding.

Plasma arc cutting of aluminum can generate oxides of nitrogen.
Oxides of nitrogen (NO and NO2): Can cause irritation of eyes, skin and respiratory tract. Acute overexposures: Can cause reduced ability of the blood to carry oxygen (methemaglobin). Can cause cough, shortness of breath, accumulation of fluid in the lungs (pulmonary edema) and death. Effects can be delayed up to 2-3 weeks.
Nitrogen dioxide (NO2): Chronic overexposures: Can cause scarring of the lungs (pulmonary fibrosis).

Information on likely routes of exposure

Eye contact	Dust and fumes from processing: Can cause irritation.
Skin contact	Dust and fumes from processing: Can cause irritation. Contact with residual oil/oil coating: Can cause irritation. Prolonged or repeated skin contact may cause dermatitis.
Inhalation	Additional health effects from elevated temperature processing (e.g., welding, plasma arc cutting): Can cause. Acute overexposures: Can cause the accumulation of fluid in the lungs (pulmonary edema) and reduced ability of the blood to carry oxygen (methemaglobin).
Ingestion	Not available.
Symptoms related to the physical, chemical and toxicological characteristics	Dust and fumes from processing: Can cause mechanical irritation. Contact with residual oil/oil coating: Prolonged skin contact may cause skin irritation and/or dermatitis.

Information on toxicological effects

Components	Species	Test Results
Aluminum (CAS 7429-90-5)		
Acute		
Inhalation		
LC50	Rat	> 2.3 mg/l
		7.6 mg/l
Oral		
LD50	Rat	> 2000 mg/kg

Acute toxicity	Not applicable.
Skin corrosion/irritation	Non-corrosive.
Serious eye damage/eye irritation	Dust and fume from processing: May irritate eyes.
Respiratory or skin sensitization	Not a skin sensitizer.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Contact with residual oil/oil coating: Prolonged contact may cause redness and irritation.
Germ cell mutagenicity	Contains no ingredient listed as a mutagen.
Neurological effects	Not classified. Based on available data, the classification criteria are not met.
Pre-existing conditions aggravated by exposure	Dust and fume from processing: Asthma, chronic lung disease, and skin rashes.

Carcinogenicity Contains no ingredient listed as a carcinogen

ACGIH Carcinogens

Aluminum (CAS 7429-90-5)	Not classifiable as a human carcinogen. A4

Reproductive toxicity Contains no ingredient listed as toxic to reproduction.

Routes of exposure Eye contact. Skin contact. Inhalation.

Specific target organ toxicity - single exposure Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure Not classified. Based on available data, the classification criteria are not met.

Aspiration hazard Not applicable.

Chronic effects Not applicable.

12. Ecological information

Ecotoxicity This material is not expected to be harmful to aquatic life.

Persistence and degradability The product contains inorganic compounds which are not biodegradable.

Bioaccumulative potential Will not bio-accumulate.

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

Waste codes RCRA Status: Must be determined at the point of waste generation. If material is disposed as a waste, it must be characterized under RCRA according to 40 CFR, Part 261, or state equivalent in the U.S.

Waste from residues / unused products Not available.

Contaminated packaging Not available.

14. Transport information

General Shipping Information

Basic Shipping Information

ID number	-
Proper shipping name	Not regulated
Hazard class	-
Packing group	-

General Shipping Notes

• When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

15. Regulatory information

US federal regulations In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

All electrical equipment must be suitable for use in hazardous atmospheres involving aluminum powder in accordance with 29 CFR 1910.307. The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installation which will meet this requirement.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories	Immediate Hazard - Yes	If particulates are generated during processing
	Delayed Hazard - Yes	If particulates are generated during processing
	Fire Hazard - No	
	Pressure Hazard - No	
	Reactivity Hazard -Yes	If molten

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value

SARA 311/312 Hazardous chemical Yes

Disclaimer The user of this SDS should verify the substance specific concentration information as it relates to regulatory reporting. Listed concentrations may cover a range of formulations and process batch variations.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum	7429-90-5	>= 98.9

US state regulations

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

SDS Status	November 24, 2015: Change(s) in Section: 15 and 16. October 7, 2015: Change(s) in Section: 15 and 16. February 10, 2015: Change(s) in Section: 1, 3, 4, 5, 6, 7, 8, 9, 14, and 16. July 27, 2012: Reviewed on a periodic basis in accordance with Alcoa policy. Change(s) in Section: 1, 2, 3, 6, 8, 11, 12 and 15. May 6, 2009: New format. October 26, 2006: Reviewed on a periodic basis in accordance with Alcoa policy. Change(s) in Section: 1, 2, 4, 5, 7, 8, 10, 11, 12 and 15. August 20, 2003: Reviewed on a periodic basis in accordance with Alcoa policy. Change(s) in Section: 1, 3, 8 and 15. Origination date: March 16, 1990 Preparer: Jim Perriello, +1-865-977-2051 SDS System Number: 115949
Revision date	November 24, 2015.
Version #	08
Revision Information	Hazard(s) identification: Supplemental information Composition / Information on Ingredients: Additional Components Handling and storage: Requirements for Processes Which Generate Dusts or Fines Physical & Chemical Properties: Multiple Properties Toxicological information: Symptoms related to the physical, chemical and toxicological characteristics Regulatory information: Disclaimer Other information, including date of preparation or last revision: SDS Status HazReg Data: North America
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.

Other information

- Aluminum Association’s Bulletin F-1, "Guidelines for Handling Aluminum Fines Generated During Various Aluminum Fabricating Operations." The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
- Aluminum Association, "Guidelines for Handling Molten Aluminum, The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
- NFPA 484, Standard for Combustible Metals (NFPA phone: 800-344-3555)
- NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids
- NFPA 70, Standard for National Electrical Code (Electrical Equipment, Grounding and Bonding)
- NFPA 77, Standard for Static Electricity

Key/Legend:
ACGIH American Conference of Governmental Industrial Hygienists
AICS Australian Inventory of Chemical Substances
CAS Chemical Abstract Services
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CFR Code of Federal Regulations
CPR Cardio-pulmonary Resuscitation
DOT Department of Transportation
DSL Domestic Substances List (Canada)
EC Effective Concentration
ED Effective Dose
EINECS European Inventory of Existing Commercial Chemical Substances
ENCS Japan - Existing and New Chemical Substances
EWC European Waste Catalogue
EPA Environmental Protective Agency
IARC International Agency for Research on Cancer
LC Lethal Concentration
LD Lethal Dose
MAK Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL Non-Domestic Substances List (Canada)
NIOSH National Institute for Occupational Safety and Health
NTP National Toxicology Program
OEL Occupational Exposure Limit
OSHA Occupational Safety and Health Administration
PIN Product Identification Number
PMCC Pensky Marten Closed Cup
RCRA Resource Conservation and Recovery Act
SARA Superfund Amendments and Reauthorization Act
SIMDUT Système d'Information sur les Matières Dangereuses Utilisées au Travail
STEL Short Term Exposure Limit
TCLP Toxic Chemicals Leachate Program
TDG Transportation of Dangerous Goods
TLV Threshold Limit Value
TSCA Toxic Substances Control Act
TWA Time Weighted Average
WHMIS Workplace Hazardous Materials Information System
m meter, cm centimeter, mm millimeter, in inch,
g gram, kg kilogram, lb pound, µg microgram,
ppm parts per million, ft feet

*** End of SDS ***

WROUGHT ALUMINUM PRODUCTS, 1xxx SERIES ALLOYS

Warning

Hazard statement
May form combustible dust concentrations in air.

Precautionary statement
Prevention
Not applicable.

Response
Not applicable.

Storage
Not applicable.

Disposal
Reuse or recycle material whenever possible.

Supplemental information
This product does not present fire or explosion hazards as shipped. Small chips, fine turnings and dust from processing may be readily ignitable.

Explosion/fire hazards may be present when:

- Dust or fines are dispersed in air.
- Chips, dust or fines are in contact with water.
- Dust and fines are in contact with certain metal oxides (e.g., rust, copper oxide).
- Molten metal is in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide).

Dust and fumes from processing: Can cause irritation of the eyes, skin and upper respiratory tract.

FIRE FIGHTING MEASURES: Use Class D extinguishing agents on fines, dust or molten metal. Use coarse water spray on chips and turnings.

DO NOT USE halogenated extinguishing agents on small chips/fines.

DO NOT USE water in fighting fires around molten metal.

These fire extinguishing agents will react with the burning material.

IN CASE OF SPILL: Collect scrap for recycling. If molten: Use dry sand to contain the flow of material. All tooling (e.g., shovels or hand tools) and containers which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Allow the spill to cool before remelting as scrap.

See Alcoa SDS Number 0663.

USA: Chemtrec: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken)

Alcoa Inc., 201 Isabella Street, Pittsburgh, PA 15212-5858 United States +1-412-553-4001 (24 Hour Emergency Telephone, English only)
Alcoa Health and Safety Email: accmsds@alcoa.com Tel: +1-412-553-4649 and Fax: +1-412-553-4822

ALCOA